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AUTHOR Copeland, Willis D.
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ABSTRACT

Descriptive data were collected over a two-month period on two middle elementary classrooms to which student teachers had been assigned. From this data typical patterns of teaching/learning behavior were identified for each classroom. The student teachers were then interchanged, and the data collection continued for another two months. Comparison of data collected before and after the student teacher exchange revealed the persistence of some and the modification of other behavior patterns possibly attributable to the exchange. These results were used to generate hypotheses concerning possible relationships among selected components of the classroom ecosystem. (Author)

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THE IMPACT OF COMPONENT CHANGES ON BEHAVIORS IN CLASSROOM ECOSYSTEMS

Willis D. Copeland

University of California
Santa Barbara

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THE IMPACT OF COMPONENT CHANGES ON BEHAVIORS IN CLASSROOM ECOSYSTEMS[1]

Willis D. Copeland

University of California
Santa Barbara

The purpose of this project was to detect and describe instances in which classroom members adapt their patterns of behavior so as to meet the demands of their classroom environments. Contrary to the traditional assumption that teachers are the primary causative factors of classroom teaching/learning behaviors, some recent writers (Copeland, 1978; Doyle, Note 1; Fiedler, 1975; Haller, 1967; Iannaccone & Button, Note 2; Islein, 1971; Noble & Nolan, 1976; Sherman & Cormier, 1974) have suggested and offered evidence that teaching/learning behaviors may be seen as the products of interactions of the inhabitants of the classroom with each other and with their environment. This assumption suggests that classrooms take on their characteristics as members, both teachers and students, alternately influence and are influenced by one another. Such an assumption posits a dynamic process of assertion and adaptation, involving all the inhabitants of the

classroom but not being dominated by any. This project's purpose was to generate descriptions of this process and its products which will be useful in developing testable hypotheses about behavior in classrooms.

Method

To develop descriptions of adaptations of teaching and learning behaviors to classroom demands the project undertook three steps. First, descriptions of typical patterns of teaching/learning behavior were obtained in two separate classrooms. These classrooms were both sites in which credential students were assigned to practice teach. Next, one component of the environment in each classroom was systematically altered. This alteration involved removing both student teachers and reassigning each to the classroom in which the other had been previously placed. Third, the effects of this alteration on both the pupils in the classes and their new student teachers were observed.

Setting for project. To begin the first step of the project, two middle grade elementary classrooms were selected. Both classrooms were self-contained and both had student teachers assigned to them from a nearby university. Classroom "A", a fourth grade class, was located in a racially and ethnically mixed school and contained a large proportion of underachieving students. The resident teacher had eleven years experience and was considered by her principal as exceptionally successful when working with this type of student. Classroom "B", a third-fourth combination, was located in a school in an affluent, upper-middle and upper class neighborhood. The students

were predominately from profession-oriented families. Though some students exhibited learning difficulties, the majority were at or above grade level in achievement. The teacher in this classroom had nine years experience and was considered by her principal to be among the most capable and academically oriented teachers in the school. The student teachers who were assigned to these classrooms, a 22-year-old male in Classroom "A" and a 24-year-old female in Classroom "B", were enrolled in the regular fifth year elementary credential program at the University of California, Santa Barbara.

Initial data gathering. Open-ended observations conducted over a two-month period were used to obtain descriptions of patterns of teaching/learning behavior typical of each classroom. Obviously, not all teaching/learning behaviors could be ovserved and recorded. As an early task it was therefore necessary to identify those patterns of behavior which would be selected as target behaviors for the present study. As the observations progressed through the initial weeks, a number of behavior groups were identified, (1) which occurred relatively often in both classrooms, and (2) within which apparent differences between classrooms normally occurred.

In order both to allow meaningful comparisons and to keep the volume of gathered data manageable it was necessary to focus on selected segments of the classroom day. The segments chosen were characterized by recitation-type activity with a large proportion if not all of the pupils participating. Recitation activities have been found to be common in classrooms of the type observed here (Bossert, 1977; Hoetker & Ahlbrand, 1969) and were therefore considered

appropriate for the purposes of the present project. Though these segments occurred at different times during the day and involved different subject matter from day to day, they lasted between twenty-five and forty minutes and required the student teacher to manage a large number of students in a coordinated group activity. The instructional activity varied between explanation and questioning and the pupils were expected to listen and, occasionally, to participate verbally. During these selected segments of the classroom day the cooperating teacher in whose room these activities occurred was not present and, therefore, did not physically intervene in the lesson. Though concentration on this small portion of the day admittedly limits the focus of this project, it was felt both necessary given the volume of data gathered and appropriate given the purpose of the study.

Exchange of student teachers. After the mapping of selected behavior patterns in the two classrooms had been completed, the second step of the project began. The student teachers were interchanged during the switch from Fall to Spring Semester student teaching assignments. Each student teacher had completed one semester practice teaching and was embarking on a second semester in a different classroom, a practice typical of the U.C. Santa Barbara credential program. Thus, both student teachers left their classroom, a place in which they had become an accepted component of the environment, and entered the other's classroom.

Subsequent data gathering. After the interchange of student teachers the project's third step began. The classrooms were observed for an additional two months with special attention focused on those behavioral

groups which had been previously identified as differing between classrooms. In addition to this direct observation, interviews were conducted with both student teachers and approximately one-third of the pupils in each classroom. The students who participated in these interviews were selected to represent a cross-section of the class. The purpose of the interviews was to better understand both why the behaviors identified during the initial observation existed and why they either persisted or changed after the student teacher exchange.

Patterns resulting from the initial observation

Upon completion of the initial observation six basic groups of teaching/learning behavior patterns were identified. Each of these selected behavior groups were present in both classrooms but they differed markedly in their nature from classroom to classroom. To describe these findings it will be necessary to refer to the two student teachers individually. The fictitious name "Al" will be used to designate the male who taught in the Fall Semester in Classroom "A". "Beth" will designate the female who began her Fall teaching in Classroom "B".

1. Pupil attending behavior. In Classroom "A" the pupils located nearest the teacher were inclined to attend to the lesson and participate. Their number varied but generally approximated 50% of the pupils in the class. In Classroom "B", at any point in time, a substantial majority of the pupils, wherever located in the room, attended to the lesson.

2. Pupil non-parallel activity. This behavior group included any pupil actions which were not required by the lesson. Distinguished

from simple inattention, these behaviors include obvious movement and purposeful involvement in alternate activity. In Classroom "A" a few pupils, six to eight, were allowed to pursue non-parallel activity whenever they were so inclined. These tended to be the same pupils from day to day. This non-parallel activity could either involve other pupils -- playing checkers or carrying on an extended conversation -- or could be an individual activity -- playing with the class' pet rabbit. If other pupils attempted such non-parallel activity, Al would interfere when he noticed it. In Classroom "B" no pupils were permitted to engage in activities not related to the lesson. Some pupils succeeded in doing so without being caught but such activity was always on an individual basis. Soon after two or more pupils began to interact on a non-parallel activity Beth would notice them and intercede.

3. Teacher's pupil control techniques. Al very often made general verbal requests for quiet which were addressed to the entire class. "Will you hold it down," and "Let's not have so much talking," were common. At other times he identified individual pupils by name and asked that they desist in a particular action that troubled him. To reinforce these requests Al used threats, especially detention after class, and rewards such as early dismissal. Finally, Al occasionally wrote deviant pupils' names in the corner of the chalkboard, expecting them to conform to class rules after they see their name written. By contrast, Beth seldom addressed the entire class. Instead, she identified individual pupils who were behaving properly and praised them, calling the attention of the remainder of the

class to their desired behavior. Typical statements were, "I see that Kevin is in his seat and quiet" and "I like the way Anna is ready to begin." Only occasionally did she make requests to individuals for attention. In addition, Beth used devices to gain pupils' attention, the most prominant being an imitation game in which she would make a gesture --place her hands on her head -- and wait for the pupils to imitate her. Then she would use a second gesture and wait for imitation. Normally, after three or four gestures all pupils would have "caught on" and focused their attention on her. Finally, Beth would often stand in front of the room, mouth closed and a serious expression on her face, alternating eye contact with various pupils. As the awareness grew that she was waiting for quiet the pupils were expected to settle down and attend to the teacher.

4. Teacher question-directing behavior. In Classroom "A", Al showed a strong tendency to direct his questions at the entire class without identifying any individual pupil as a potential respondent. After asking the question he waited for any pupils so inclined to speak out their replies. Al then accepted the first clearly discernable reply and reacted to it, continuing the lesson. By contrast, in Classroom "B", though Beth directed her questions toward the entire class at times, at other times she selected either volunteers with raised hands or non-volunteers as respondents before she posed the question. When the question was addressed to the entire class Beth waited for raised hands then selected one pupil, a volunteer or, less often, a non-volunteer, to respond.

5. Pupil response to teacher question behavior. Closely related

to the teachers' question directing behavior, this group of pupil behaviors involves their responses to the teacher's questions. In Classroom "A" the pupils showed the persistent tendency to shout out answers to Al's questions when they desired to participate. Though many pupils raised their hands, they did not wait to be recognized but instead quickly volunteered their responses, many times seeming to engage in a race with their fellow pupils to be the first to answer. In Classroom "B" the pupils consistently raised their hands when they wanted to respond to Beth's questions and then waited to be recognized before talking. Though occasional impatience was manifest in anxious waving of hands and pained expressions on faces when it seemed unlikely that they would be called on, pupils did not normally voice answers unless called on by the teacher.

b. Pupil verbal initiating behavior. Parallel to pupil response behavior described above, this behavior group encompasses those actions used by the pupils to interject ideas of their own into the class. This group does not, therefore, include direct responses to teacher questions. In Classroom"A" normal action for approximately half the pupils included calling out their contributions when so inclined without waiting for teacher permission. The remaining pupils did not tend to offer their ideas publicly. Only occasionally did any pupils elicit permission to offer their own ideas and these rare solicitations were generally not intended to request a public forum but, instead, a semi-private interchange between the teacher and the pupil. In Classroom "B" almost all pupil initiation of verbal behavior in front of the class was preceeded by raised hands and waiting for the teacher's

permission to speak.

Persistence of Patterns after Exchange of Student Teachers

Observation of the two classrooms after the switch of student teachers revealed maintenance of some and marked change in other patterns of the above behavior groups. These instances of maintenance or change are described in Table 1.

[insert Table 1 about here]

Examination of Table 1 reveals that the dominant tendency of the pupils was to maintian their behaviors after the entrance of a new student teacher. The two exceptions to this tendency were the Classroom "B" students adoption of shouting out behavior, both in response to teacher's questions and when imitating verbal activity, after "Al" entered their room. Further, the dominate tendency of the teachers was to adapt their behavior to meet the demands of the classes they entered. Again, the exception was Al's persistence of question directing behavior in Classroom "B".

Explanation of possible reasons for these tendencies will be offered during the verbal presentation of this paper. A primary conclusion would be the suggestion that, when an incompatability exists between a new teacher's behavior patterns and previously established patterns in classrooms, one or both of the patterns will be modified.

The class inhabitants in the present study -- cooperating teacher, student teacher and pupils -- had become accustomed to teaching and learning behaviors, the interrelationships of which had been worked

out over the school year. It was observed that, in the case of both student teachers, some of the behaviors they exhibited when entering their new assignments did not conform to those teaching behaviors to which the pupils had been accustomed. Further, the student teachers had expectations of pupil behavior which were not consistent with the behavior patterns typical of the pupils in the classrooms into which they entered. As the student teachers undertook active involvement in their new practice teaching assignments, a period of negotiation was observed to ensue in which inconsistencies between their behaviors and expectations and those previously established in the classroom were identified. As these inconsistencies appeared, resolution was pursued, either by adaptation of the teachers to the pupils' behaviors or, less often, of the pupils to the student teachers' expectations. This process of persistence and adaptation seemed to be mediated by a variety of factors. First, the sense that the teacher had of the "fit" between his or her behaviors and expectations on the one hand and their apparent appropriateness to the pupils on the other seemed a strong determinant (Cronbach & Snow, 1976). Second, the degree to which the pupils perceived the efficacy of their behaviors for the performance-for-grade exchange seemed related to the persistence or adaptation of certain teaching/learning behaviors (Becker, Geer & Hughes, 1968; Doyle, Note 3). Finally, differing ability levels of the pupils in the two classrooms was apparently related to both these factors, affecting the differences in teaching and learning behaviors present (Campbell, 1974; Metz, Note 4).

The ideas and suppositions reported in this paper are, at the

most, tentative. Though derived from observations of student teachers and pupils in actual school settings, no attempt has been made to support general statements about student teachers or pupils or their behaviors which go beyond the specific individuals observed. Yet, it is hoped that the descriptions of classroom behaviors offered herein, and the speculations about factors which mediate their persistence or adaptation will serve as a helpful early step toward understanding classrooms and the activities that occur in them.

FOOTNOTES

[1]Special thanks are offered to the student and cooperating teachers in whose classrooms this project was conducted, though their names must go unmentioned. Also of great help were reviews of early drafts offered by Walter Doyle and Robert Everhart. The author is currently Assistant Professor of Education at the University of California, Santa Barbara.

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Table 1

Behaviors Representing Six Behavior Groups Observed in Classroom "A" and "B" Before and After the Interchange of Student Teachers

Behavior Groups	Behaviors observed before student teacher exchange	Behaviors observed after student teacher exchange
	Classroom "A"	
1. Pupil attending behavior	Only pupils located nearest teacher (approx. 50%) attended to lesson	Behaviors observed before exchange continued
2. Pupil non-parallel activity	Some pupils (6-8) allowed to engage in non-parallel activity	Behaviors observed before exchange continued
3. Teacher's pupil control techniques	Al used direct techniques (requests for desist, warning, punishment) to gain and maintain control	Beth used direct techniques (request for desist, warning, punishment) to gain and maintain control
4. Teacher's question directing behavior	Al directed questions at class and waited for shouted out responses	Beth directed questions at class and waited for shouted out responses
5. Pupil response to teacher question	Shouted out response when inclined to participate	Behaviors observed before exchange continued
6. Pupil verbal initiating behavior	Interjected without permission	Behaviors observed before exchange continued
	Classroom "B"	
1. Pupil attending behavior	Substantial majority wherever located, attended to lesson	Behaviors observed before exchange continued
2. Pupil non-parallel activity	No pupils persisted in this behavior for any length of time	Behaviors observed before exchange continued
3. Teacher's pupil control techniques	Beth used indirect techniques (praise, games, silence) to gain and maintain control	Al used indirect techniques (praise, games, silence) to gain and maintain control
4. Teacher's question directing behavior	Beth directed questions at individuals and called on pupils with raised hands	Al directed questions at class and waited for shouted out responses
5. Pupil response to teacher question	Raised hands and waited for permission to speak	Shouted out response when inclined to participate
6. Pupil verbal initiating behavior	Raised hands and waited for permission to speak	Shouted out responses when inclined to participate